Lowerhouse Junior School
Computing Overview Sheet

Year 4 – Data Logging

National Centre for Computing Education

Rationale: In this unit, pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.

Progression: This unit progresses pupils' knowledge and understanding of data and how it can be collected over time to answer questions. The unit also introduces the idea of automatic data collection.

Overview:	Subject Knowledge
Lesson 1: To explain that data gathered over time can be used to answer questions Lesson 2: To use a digital device to collect data automatically Lesson 3: To explain that a data logger collects 'data points' from sensors over time Lesson 4: To use data collected over a long duration to find information Lesson 5: To identify the data needed to answer questions Lesson 6: To use collected data to answer questions	**Lesson 1:** This lesson will set the scene for the unit of work. Pupils will consider what data can be collected and how it is collected. They will think about data being collected over time. Pupils will also think about questions that can and can't be answered using available data, and reflect on the importance of collecting the right data to answer questions. **Lesson 2:** This lesson will build on the idea of collecting data over time, and introduce the idea of collecting data automatically using computers. Computers can capture data from the physical world using input devices called 'sensors'. Sensors can be connected to data loggers, which can collect data while not attached to a computer. Data collected by a data logger can be downloaded for use later. **Lesson 3:** In this lesson, pupils will explore how data loggers work. Pupils will try recording data at set moments in time and draw parallels with the data points that a data logger captures at regular intervals. Pupils will use data loggers independently from a computer, then they will connect the loggers to a computer and download the data. **Lesson 4:** In this lesson, pupils will open an existing data file and use software to find out key information. The data file is a five-hour log of hot water cooling to room temperature. **Lesson 5:** In this lesson, pupils will think about questions that can be answered using collected data. Pupils will choose a question to focus on and then plan the data logging process that they need to complete. After they have completed their plan, they will set up the data loggers to check that their plan will work. **Lesson 6:** In this lesson, pupils will access and review the data that they have collected using a data logger. They will then use the data collected to answer the question that they selected in Lesson 5. Pupils will also reflect on the benefits of using a data logger.

Assessment/Key Skills

Formative assessment

Assessment opportunities are detailed in each lesson plan. The learning objectives and success criteria are introduced in the slide deck at the beginning of each lesson, and then reviewed at the end. Pupils are invited to assess how well they feel they have met the learning objective using thumbs up, thumbs sideways, or thumbs down.

Summative assessment

Please see the assessment rubric document for this unit.